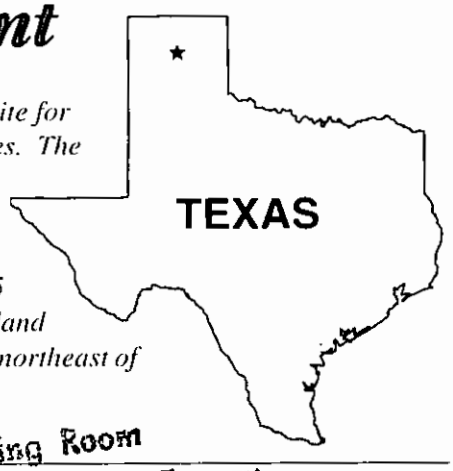
Waste Management Programmatic Environmental Impact Statement

The Waste Management PEIS and the Pantex Plant



The Pantex Plant has been a major Department of Energy site for over 40 years, providing nuclear weapons assembly facilities. The mission of the Pantex Plant includes disassembly, assembly, quality evaluation, and maintenance of the U.S. nuclear weapons stockpile. The site is also a candidate for tritium supply and recycling. The Pantex Plant, consisting of 15.75 square miles of DOE-owned land and 9.15 square miles of land leased from Texas Tech University, is located about 17 miles northeast of Amarillo, Texas.

Background

The Waste Management Programmatic Environmental Impact Statement (WM PEIS) examines the environmental impacts of managing radioactive and hazardous wastes at Department of Energy (DOE) sites throughout the United States. Five types of waste are analyzed: low-level mixed waste (LLMW), low-level waste (LLW), transuranic waste (TRUW), high-level waste (HLW), and hazardous waste (HW). The alternatives evaluated in the WM PEIS range from treatment, storage, and/or disposal at each site that generates waste to the consolidation of treatment, storage, and/or disposal facilities at one or a few DOE sites.

Of the 54 sites for which DOE has waste management responsibility, 17 are considered "major" DOE sites in the WM PEIS because they contain the bulk of the five waste types, have the capability for the future disposal of some waste types, have existing or planned major waste management facilities, or manage HLW. The Pantex Plant is a major site considered in the WM PEIS and is a potential site for management of its own LLMW, LLW, and HW. The Pantex Plant currently does not have an inventory of TRUW or HLW and is not expected to handle these waste types in the future.

Figure 1 identifies the Pantex Plant's inventory and 20-year projected waste volumes. As related to the total DOE 20-year projected inventory, the Pantex Plant's projected inventory represents 0.3% of DOE's LLMW, 3% of its LLW, and 14% of its HW.

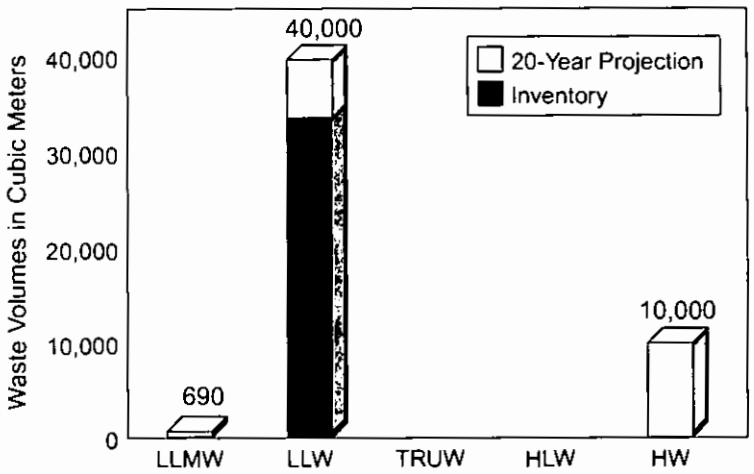


Figure 1. Pantex Plant 20-year Projected Waste Volumes. (Inventory volumes used for WM PEIS analysis are based on 1994 or earlier data. Latest estimates reduce LLW and vary for other waste types.)

The WM PEIS Alternatives—What Role Would the Pantex Plant Play?

To assist DOE in making decisions about where to locate waste management functions, the WM PEIS considers four categories of alternatives (also called "management alternatives") for each type of waste:

- **No Action** alternatives involve the use of only currently existing or planned waste management facilities;

- **Decentralized** alternatives locate waste management facilities where waste is currently located or where it will be generated, treated, or disposed of in the future;
- **Regionalized** alternatives locate waste management facilities at several sites throughout the nation; and
- **Centralized** alternatives locate large waste management facilities at only one or two sites.

The existing and planned facilities used in the analysis are discussed in Chapters 6 through 10 of the WM PEIS.

The WM PEIS provides environmental information to be used in deciding where to locate waste management activities on a national basis. Subsequent site- or project-level assessments will be conducted prior to implementing these decisions. Local public input, compliance agreements, permitting requirements, or site-specific Records of Decision would be considered prior to implementation of any waste management alternative at a site.

The Pantex Plant manages three of the five waste types–LLMW, LLW, and HW. The site is not considered a potential regionalized or centralized waste management facility and does not receive wastes from other sites. In some alternatives, LLMW and LLW will be treated and/or disposed at the Pantex Plant. In other alternatives, these wastes are shipped offsite for treatment and disposal. In all alternatives, HW is shipped offsite for treatment and disposal. Table 1 summarizes the Pantex Plant's role in managing the three waste types under each WM PEIS management alternative.

Potential Impacts Evaluated at the Pantex Plant

The WM PEIS evaluates the potential human and environmental impacts associated with the treatment, transport, storage, and disposal of the five waste types managed by DOE. The specific impacts at the Pantex Plant site resulting from management of its own LLMW, LLW, and HW are discussed in detail in Chapter 6, Chapter 7, and Chapter 10, respectively, of the WM

Table 1: The Role of the Pantex Plant in Each Waste Management Alternative

	NO ACTION *Status quo. Wastes are treated, stored, and/or disposed of at each site using only existing or planned facilities.*	DECENTRALIZED *Wastes are treated, stored, and/or disposed of at sites where they are generated. Includes new facilities where needed.*	REGIONALIZED *Wastes are consolidated by waste type for treatment, storage, and/or disposal at an intermediate number of sites.*	CENTRALIZED *Wastes are consolidated by waste type for treatment, storage, and/or disposal at one or two sites.*
LLMW	Treat wastewater only; store Pantex waste onsite.	Treat and dispose of Pantex waste onsite.	In 1 alternative, treat and dispose of Pantex waste onsite. In 3 alternatives, ship Pantex waste offsite (40 shipments per alternative) for treatment and disposal.	Ship Pantex waste offsite to Hanford, WA for treatment and disposal (40 shipments).
LLW	Ship Pantex waste to Nevada Test Site for disposal (13,740 shipments).	Dispose of Pantex waste onsite.	In 2 alternatives, dispose of Pantex waste onsite, with and without treatment to reduce volumes. In 5 alternatives, ship Pantex waste offsite (14,000 shipments per alternative) for treatment and/or disposal.	Ship Pantex waste offsite for treatment and/or disposal in all 5 alternatives (14,000 shipments per alternative).
HW	Ship Pantex waste to commercial facilities for treatment (1,700 shipments).	Ship Pantex waste to commercial facilities for treatment (2,100 shipments).	Ship Pantex waste offsite for treatment at DOE and commercial facilities in both alternatives. (1,800 and 2,760 shipments).	Alternative not analyzed in the WM PEIS.

Note:
The number(s) in parentheses represent the estimated total number of outgoing truck shipments per alternative at the Pantex Plant over 20 years.

PEIS (see text box below). Chapter 11 considers cumulative impacts, a combination of the WM PEIS impacts of the proposed activities added to impacts of other past, present, and future site activities (see text box at right).

The WM PEIS Analyzed These Site-Specific Impact Areas

- Human Health Risks
- Air Quality
- Water Resources
- Ecological
- Economic
- Population
- Environmental Justice
- Land Use
- Infrastructure
- Cultural Resources
- Costs

The WM PEIS Analyzed These Cumulative Impact Areas

- Offsite population human health risks
- Offsite maximally exposed individual health risks
- Non-involved worker health risks
- Air quality exceedances
- Infrastructure resources
- Socioeconomic impacts
- Total costs
- Transportation impacts

Table 2 presents estimates of potential public and worker impacts from various waste treatment, storage, and disposal activities. Impacts are expressed in terms of potential fatalities. The basis for these estimates includes the following:

- Radiation and chemical exposure for workers handling waste and a population of approximately 265,000 living within a 50-mile radius of the site. These numbers estimated over a 10-year period and are calculated over an average 70-year life span.
- Physical hazards to workers, such as construction accidents, estimated over a 20-year span of employment.

Table 2: The Potential Impacts of Treatment, Storage, and Disposal Activities at the Pantex Plant (Human Health and Economic Impacts)

			No Action	Decentralized	Regionalized	Centralized
LLMW	Fatalities:	Waste Management Worker*	~0	~0	~0	~0
		Offsite Population (Public)**	~0	~0	~0	~0
	Benefits:	Average Regional Jobs/Year	28	175	62-175	62
		Average Regional Income/Year	$0.3M	$1.9M	$0.7M-$1.9M	$0.7M
LLW	Fatalities:	Waste Management Worker*	~0	~0	~0	~0
		Offsite Population (Public)**	~0	~0	~0	~0
	Benefits:	Average Regional Jobs/Year	302	635	304-1,123	304
		Average Regional Income/Year	$3.2M	$6.8M	$3.3M-$12.1M	$3.3M
HW	Fatalities:	Waste Management Worker	—	—	—	Alternative not analyzed in the WM PEIS.
		Offsite Population (Public)	—	—	—	
	Benefits:	Average Regional Jobs/Year	—	—	—	
		Average Regional Income/Year	—	—	—	

Notes:
* Number of potential fatalities resulting from radiation (estimated over a 70-year life span due to 10-year exposure) and non-radiation hazards (estimated over 20 years).
** Estimated number of potential fatalities resulting from radiation exposure.
— = Action not applicable for this alternative
~ 0 = Essentially zero fatalities
M = Million(s)

The WM PEIS and the Pantex Plant

In interpreting Table 2, it is important to note that the WM PEIS methods of analysis were intended to yield estimates that tend to overestimate the risk. This was done to ensure that DOE considered a reasonable range of possible health risks. In addition, the results do not include measures DOE could take to lessen the risks, such as substituting treatment methods, substituting rail transport for truck, or rotating workers to reduce risk of exposure. Where fatalities are reported as essentially zero (~0), this is not intended to imply that the risk is absolutely zero, but that it is unlikely there would be a single fatality. The site-specific fatality estimates can be found in Volume II of the WM PEIS.

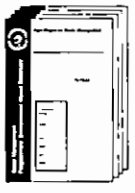
The average total number of jobs and regional income per year are presented in Table 2 for geographic areas that would be expected to experience economic benefit from selection of the alternatives over 20 years. The average jobs per year is the estimated number of newly created and existing full-time DOE waste management jobs and other full-time jobs within the region, such as those in the retail, restaurant, and other service industries. On average, these jobs would be supported each year by DOE expenditures related to waste management activities for each alternative. Economic benefits were estimated based upon the anticipated residence of site employees within the region of influence comprised of three counties: Carson, Potter, and Randall.

Noteworthy impacts to the Pantex Plant include:

- Estimated human health impacts are low; potential fatalities to the offsite population and to workers are essentially zero for treatment and disposal of LLMW and LLW under every alternative.
- The greatest number of annual regional jobs (over 1,123) and income ($12.1 million) for any alternative would occur under a regionalized alternative for the management of LLW.
- Shipments of LLW offsite for disposal could average14,000 for each of the five LLW alternatives, as noted in Table 1.

To review the WM PEIS, visit the
Amarillo College Library/Lynn Library
DOE Reading Room
2201 S. Washington, Amarillo, TX 79109
(806) 371-5419

For more information, including other local WM PEIS reading rooms and public meeting dates, call
1-800-736-3282
Center for Environmental Management Information



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